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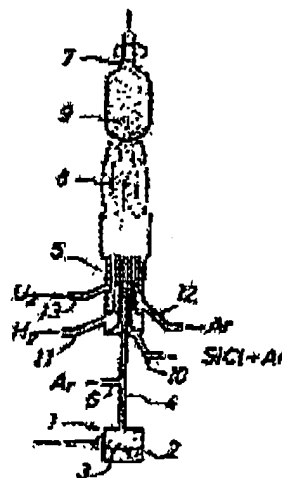
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(54) PREPARATION OF RARE EARTH ELEMENT-DOPED GLASS

(57)Abstract:

PURPOSE: To improve the concentration of a dope by feeding a main glass raw material, an atomized rare earth element chloride, a combustion gas and an inert gas into a specific multiple tube structure burner.

CONSTITUTION: A burner 5 is a concentric five-fold tube structure quartz tube. A vibration-atomized rare earth element chloride such as ErCl_3 and a carrier gas, a main glass raw material such as SiCl_4 and a carrier gas, a combustion gas, an inert gas for controlling the reaction and oxygen gas for the combustion are fed into the first, second, third, fourth and fifth layers of the burner 5, respectively. The flame 8 containing the glass raw material and the atomized rare earth element chloride is sprayed from the burner 5 on the tip of a rotated and lifted quartz target bar 7. Glass fine particles doped with the rare earth element produced by a reaction in the flame 8 are deposited on the tip to form a porous preform 9 in the axial direction. The material is heated at a prescribed temperature to form the rare earth element-doped transparent glass.



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